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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/816,912

03/23/2001

Ramesh M. Kakwani

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12/17/2003

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EXAMINER

TRAN, BINH Q

ART UNIT

PAPER NUMBER

3748

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,912

Applicant(s)

KAKWANI ET AL.

Examiner

BINH Q. TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-15 is/are allowed.
- 6) ☒ Claim(s) 2-5 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the amendment filed September 23, 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 2-5 and 16-20 are rejected under 35 U.S.C. 102 (b) as being anticipated by Hirota et al. (Hirota) (Patent Number 5,974,791).

Regarding claims 5 and 16, Hirota discloses an exhaust aftertreatment system (Fig. 9) for use in a diesel engine (1) comprising:

a) a catalyzed soot filter (e.g. 91) downstream of the diesel engine (1) and through which the exhaust gases from the diesel engine pass, said catalyzed soot filter (e.g. 91) in direct fluid communication with the position at which said diesel engine discharges said exhaust gas without any intervening catalyst therebetween;

b) an SCR catalyst (e.g. 53) downstream of and in direct fluid communication with the catalyzed soot filter (91) and through which the exhaust gases from the diesel engine pass after passing through the catalyzed soot filter; and,

c) a metering valve (e.g. 12a) for metering a reducing agent tending to reduce NO_x at elevated temperature in the exhaust gases when passing through the SCR catalyst; wherein the metering valve is positioned upstream of the catalyzed soot filter (e.g. See col. 16, lines 27-61).

Regarding claim 2, Hirota further discloses that the reducing agent is ammonia and the metering valves meters the ammonia at a position between the catalyzed soot filter and the SCR catalyst (e.g. See col. 7, lines 25-63).

Regarding claim 3, Hirota further discloses a mixing station (e.g. 12a) upstream of the metering valve for producing ammonia in gas or liquid form from an ammonia precursor such as urea (e.g. See col. 7, lines 25-63).

Regarding claim 4, Hirota further discloses that the SCR catalyst is a lean NO_x catalyst of a high or low temperature type and the reducing agent is a hydrocarbon (e.g. See col. 7, lines 25-63).

Regarding claim 17, Hirota further discloses that the soot filter has a catalyzed surface containing at least 25 g/ft³ of a platinum metal group (See col. 5, lines 56-67; col. 6, lines 1-26).

Regarding claim 18, Hirota further discloses that the SCR catalyst has a catalyst composition of zeolite, a promoter selected from the group consisting of iron and copper and a refractory binder (See col. 5, lines 56-67; col. 6, lines 1-26).

Regarding claim 19, Hirota further discloses that the nitrogen reductant is ammonia and said quantity of said reductant metered to said exhaust gases does not exceed a normalized stoichiometric ratio of 1.5 (See col. 5, lines 56-67; col. 6, lines 1-26).

Regarding claim 20, Hirota further discloses that the exhaust gases are immediately passed to atmosphere after exiting said SCR catalyst without further treatment of emissions contained therein (See col. 5, lines 56-67; col. 6, lines 1-26).

Response to Arguments

Applicant's arguments filed September 23, 2003 have been fully considered but they are not completely persuasive. Claims 2-5, and 7-20 are pending.

Applicant's cooperation in correcting the informalities in the specification is appreciated. Applicant's cooperation in explaining the claims subject matter more specific to overcome the claim objections relating to indefinite claim language is also appreciated.

Applicants' s arguments with respect to claims 2-5, and 16-20 have been considered but are moot in view of the new ground(s) of rejection as discussed above.

Applicant's amendment (Claims 2-5, 7-20) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the

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date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

Allowable Subject Matter

Claims 7-15 are allowed.

Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of two patents:

Russell (Patent Number 6,199,375), and Khair et al. (Patent Number 6,615,580) all disclose an exhaust gas purification for use with an internal combustion engine.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (703) 305-0245. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (703) 308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.



BT
December 11, 2003

Binh Tran
Patent Examiner
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